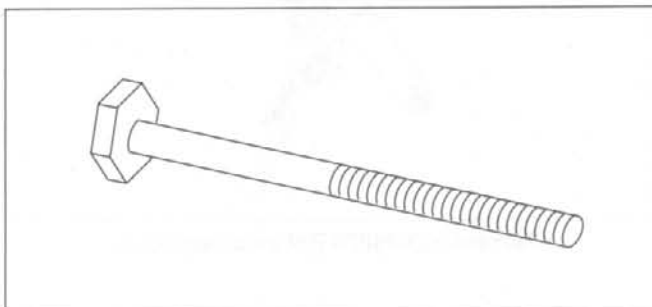


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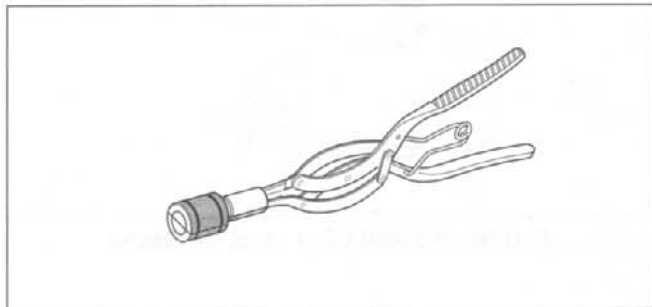
Appendix A-Tools	A-1
Appendix B-Metric Conversions	B-1

APPENDIX

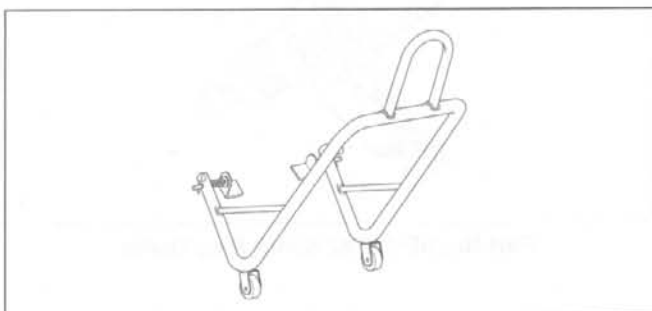
APPENDIX A-TOOLS



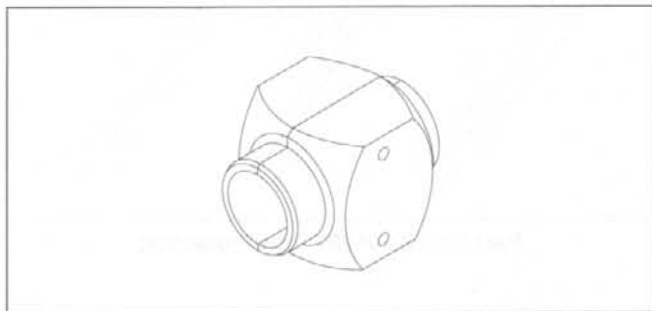
Part No. B-35316-5 12 Inch Bolt.
Used with Part No. HD-39302.



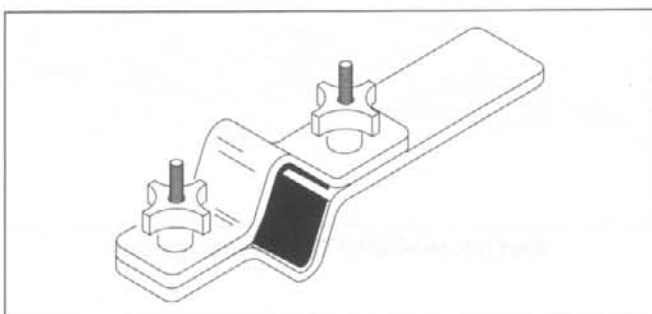
Part No. B-42887 Brake Caliper Piston Remover



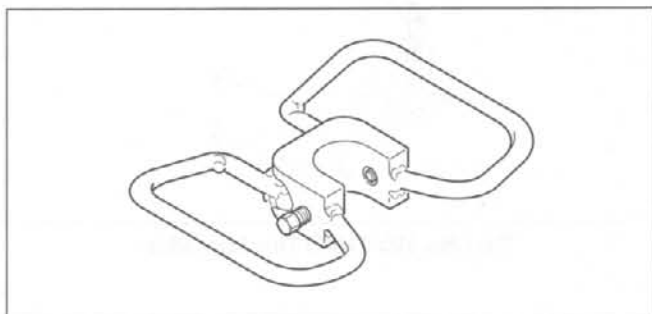
**Part No. B-41174 Rear Wheel Support Stand and
Part No. B-41174-2 Replacement Pad**



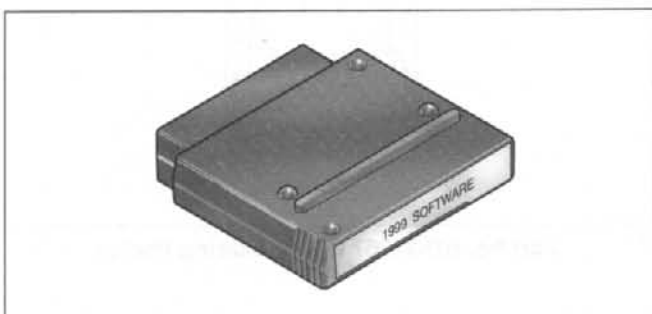
Part No. B-43721 Front Fork Seal Driver



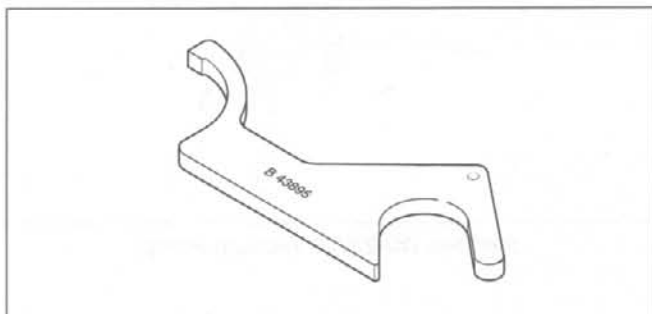
Part No. B-41177 Front Fork Holding Tool



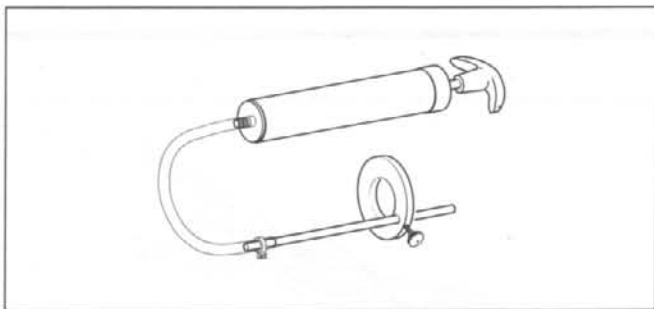
Part No. B-43875 Fork Spring Compressor



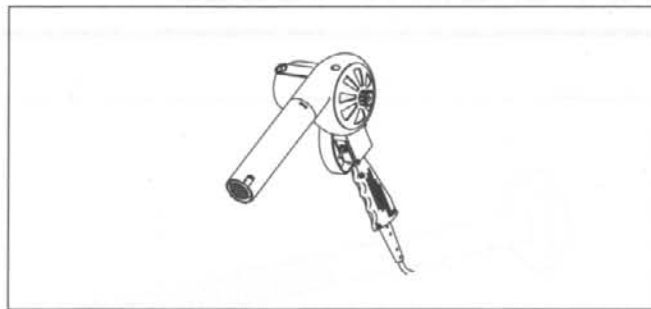
Part No. B-41325-99 Scanalyzer Software Cartridge



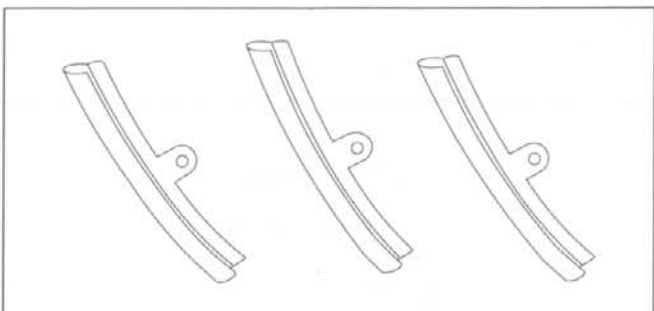
Part No. B-43895 Rear Shock Preload Spanner



Part No. B-59000A Pro Level Oil Gauge



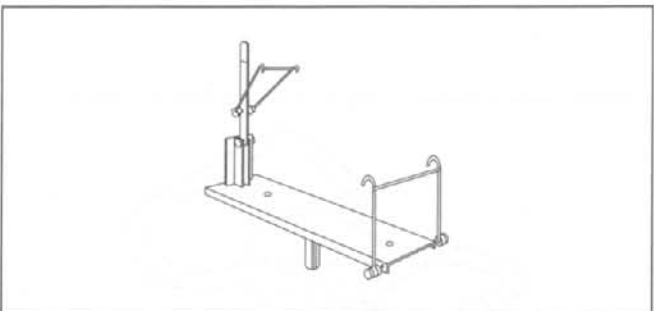
Part No. HD-25070 Robinair Heat Gun



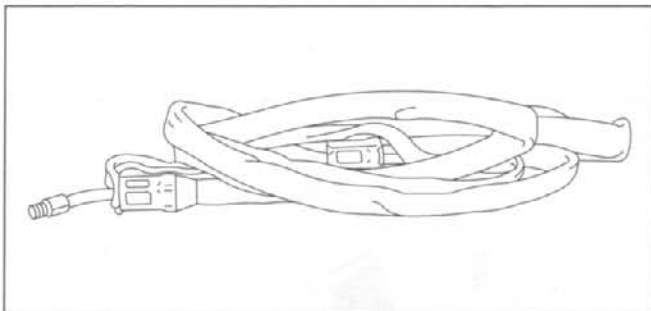
Part No. HD-01289 Rim Protectors



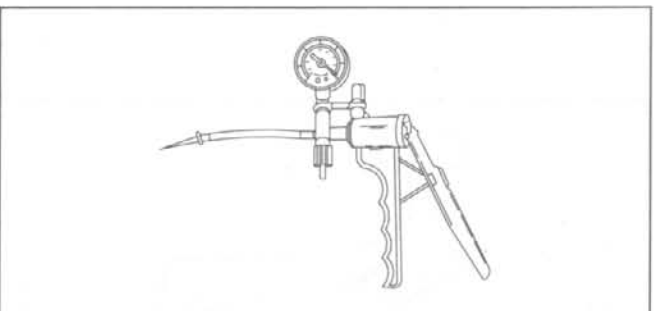
Part No. HD-26792 Spark Plug Tester



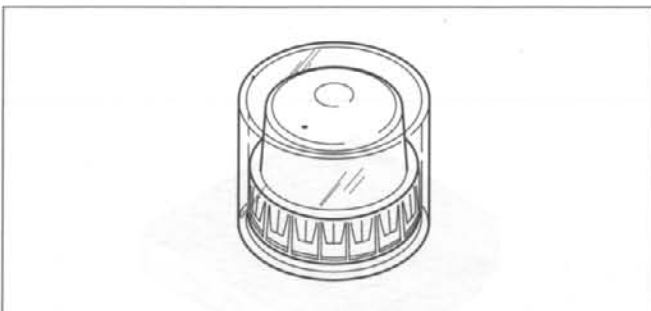
Part No. HD-21000 Tire Spreader



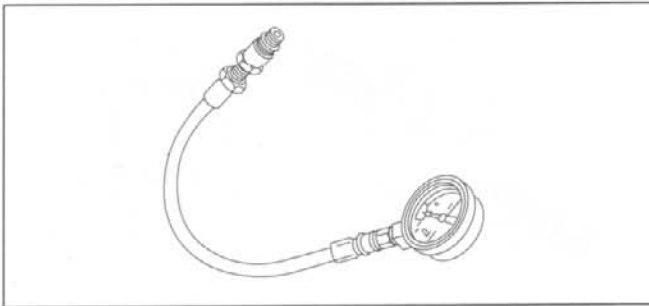
Part No. HD-28700 Tire Bead Expander



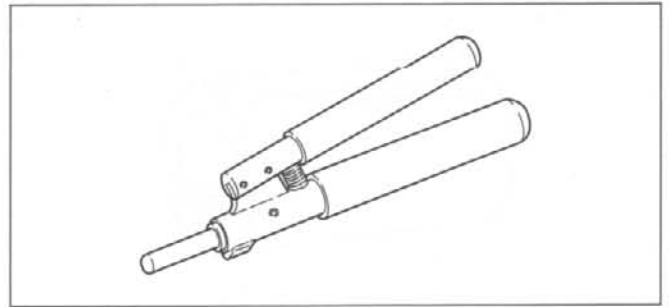
Part No. HD-23738 Vacuum Pump



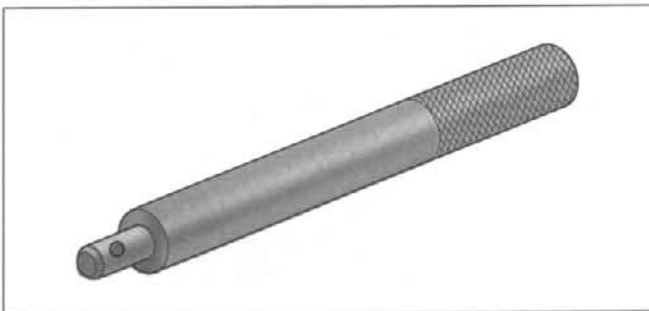
Part No. HD-33067 Wheel Bearing Packer



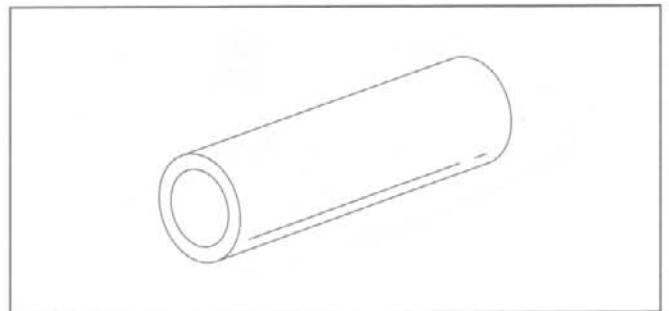
Part No. HD-33223-1 Cylinder Compression Gauge



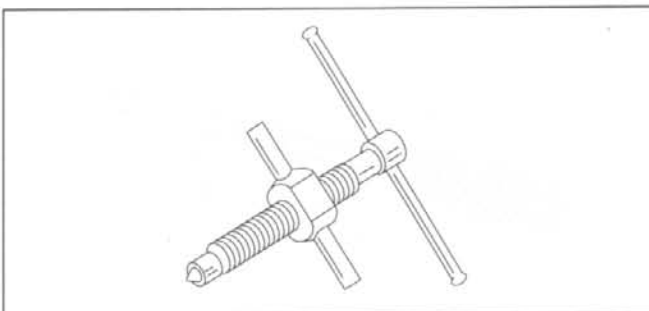
**Part No. HD-34623B Piston Pin
Retaining Ring Installer/Remover**



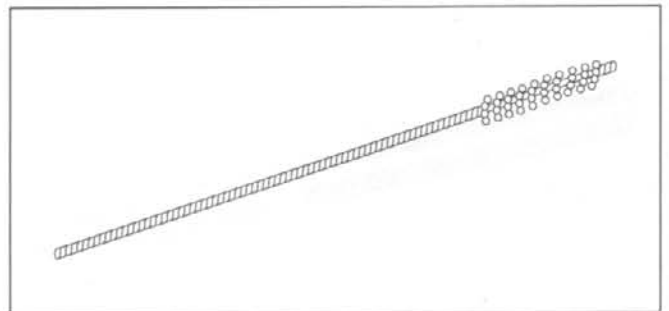
Part No. HD-33416 Universal Driver Handle



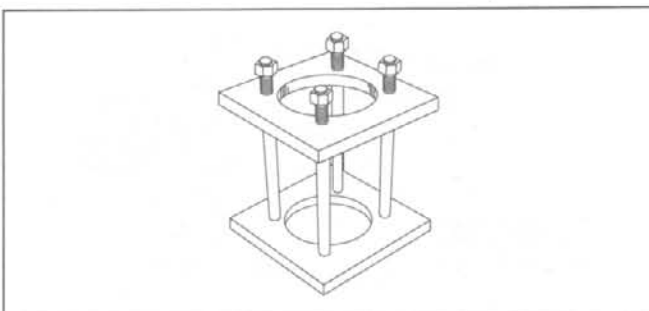
**Part No. HD-34643A Shoulderless Valve Guide
Seal Installer**



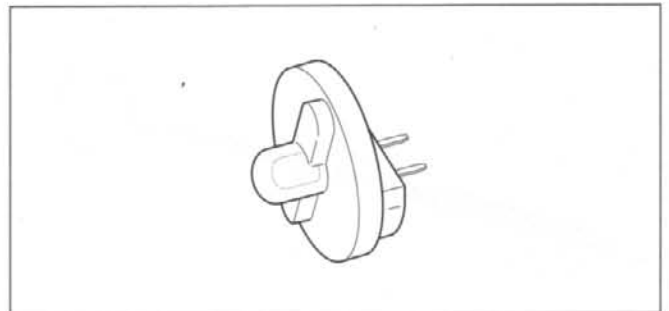
Part No. HD-33418 Universal Puller Forcing Screw



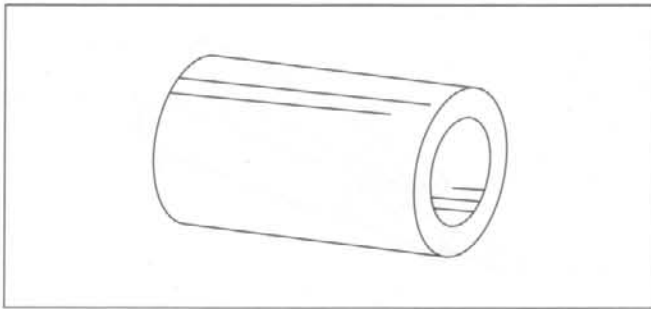
Part No. HD-34723 Valve Guide Hone (8 mm)



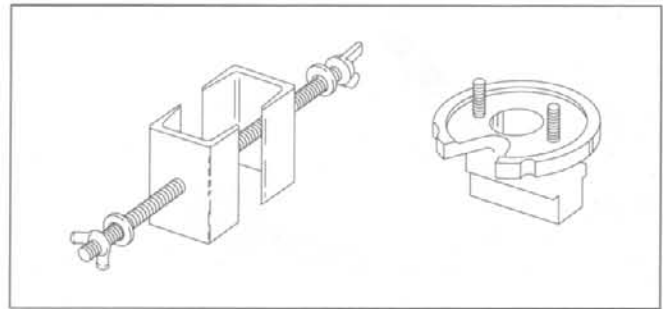
**Part No. HD-33446A Cylinder Torque Plates
and Torque Plate Bolts Part No. HD-33446-86**



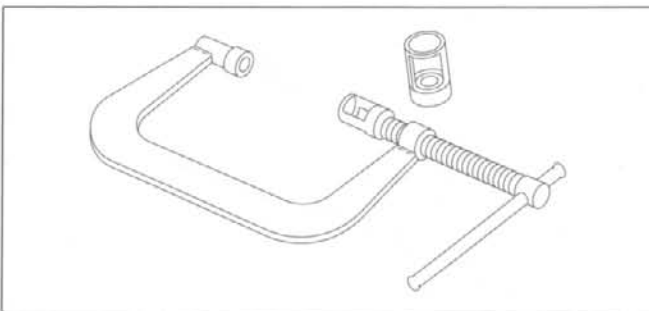
Part No. HD-34730-2C Fuel Injector Test Lamp



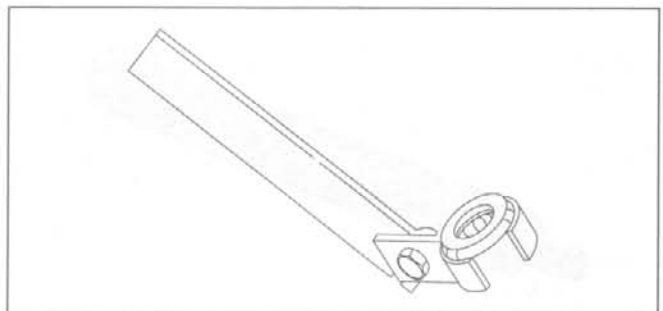
**Part No. HD-34731 Shoulderless Valve Guide
Installation Tool**



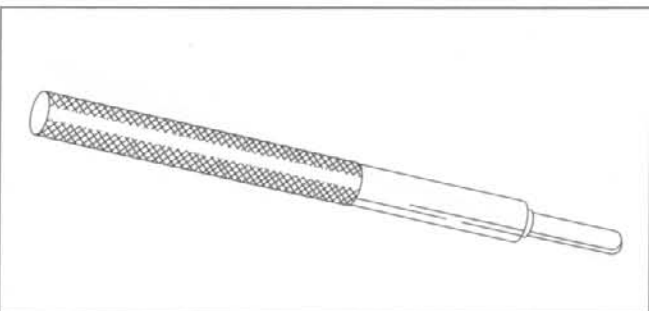
Part No. HD-34813 Rowe Flywheel Rebuilding Jig



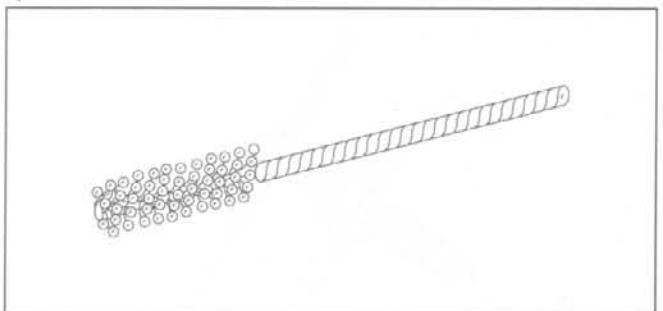
Part No. HD-34736B Valve Spring Compressor



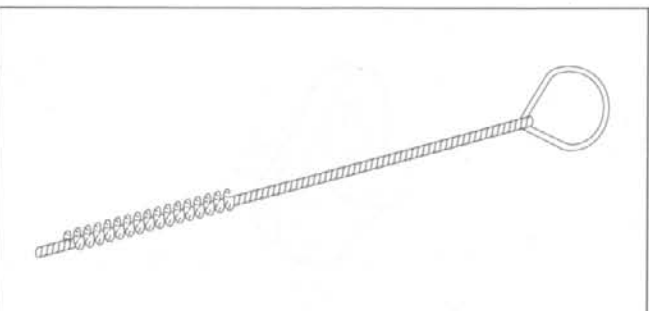
Part No. HD-34816 Oil Pressure Switch Wrench



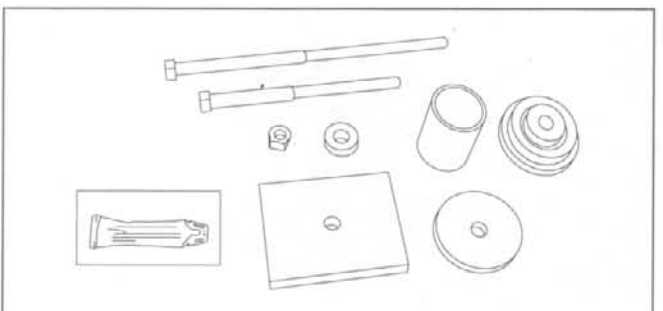
**Part No. HD-34740 Driver Handle and Remover. Used with
HD-34643A and HD-34731.**



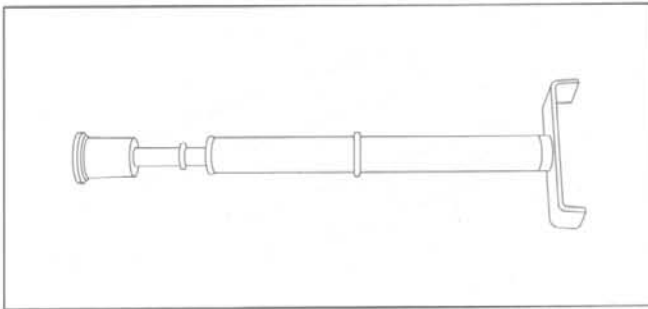
Part No. HD-35102 Wrist Pin Bushing Hone (20 mm)



Part No. HD-34751 Nylon Valve Guide Brush



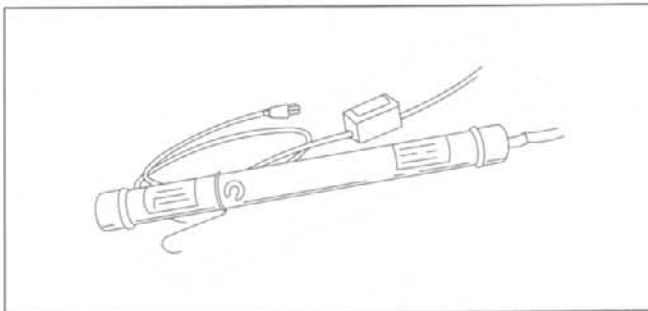
**Part No. HD-35316-A Main Drive Gear Remover/Installer
and Main Drive Gear Bearing Installer**



Part No. HD-35381 Belt Tension Gauge



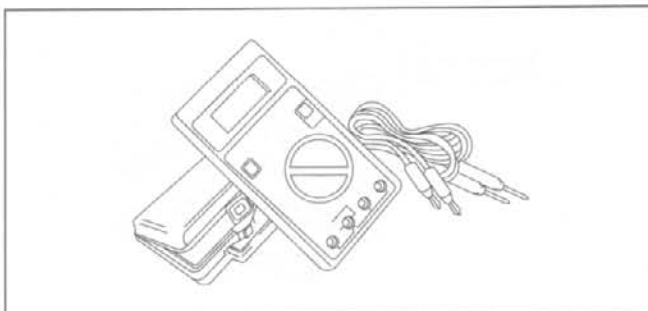
Part No. HD-35667A Cylinder Leakdown Tester



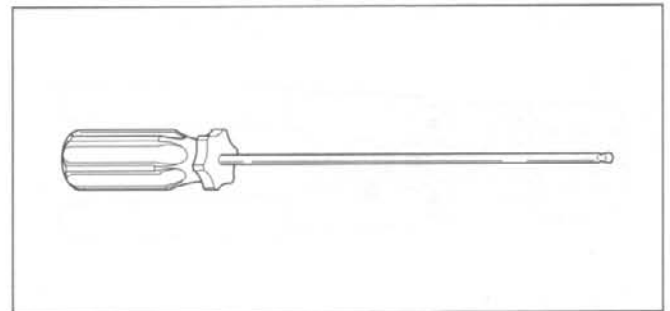
Part No. HD-35457 Black Light Leak Detector



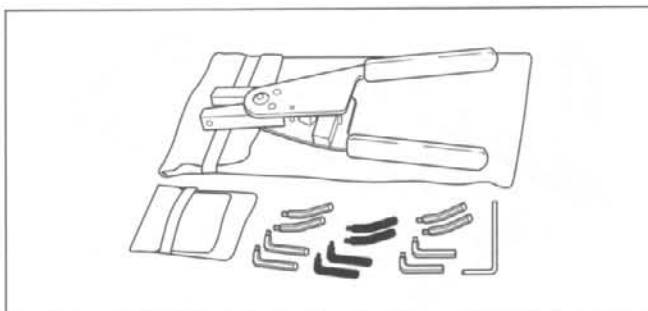
Part No. HD-35758A Neway Valve Seat Cutter Set



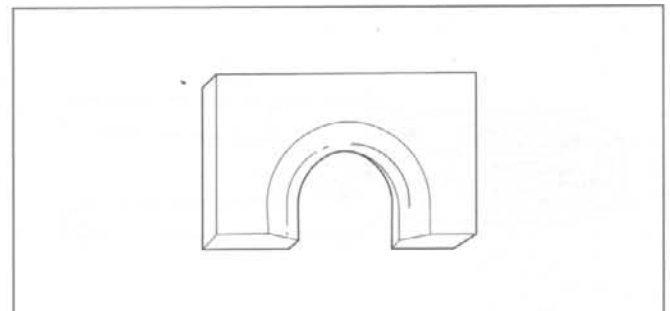
Part No. HD-35500A Digital Multi-Meter (FLUKE 23)



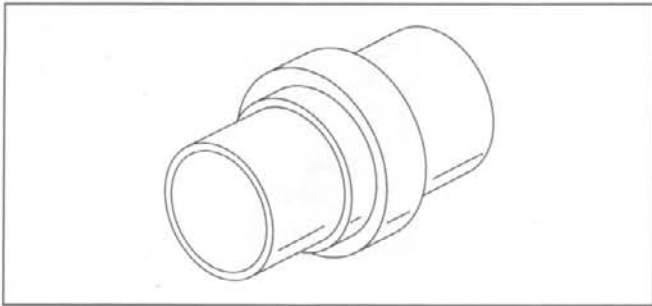
Part No. HD-35801 Intake Manifold Screw Wrench



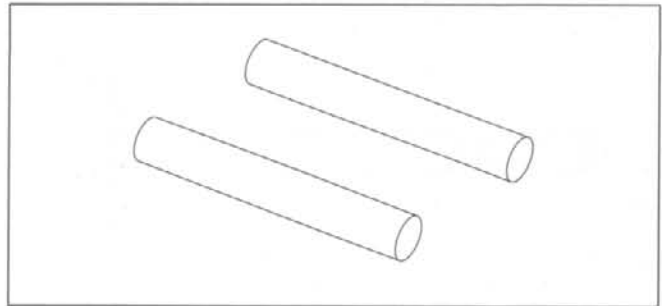
Part No. HD-35518 Internal/External Retaining Ring Pliers



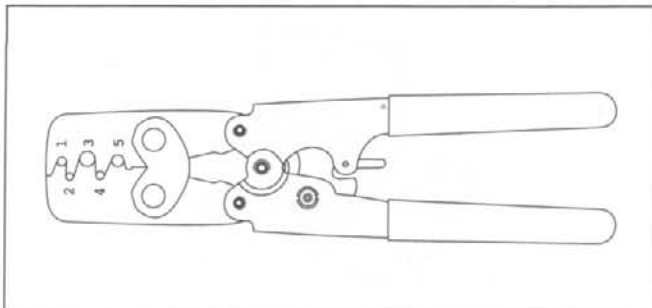
Part No. HD-37404 Countershaft Gear Support Plate



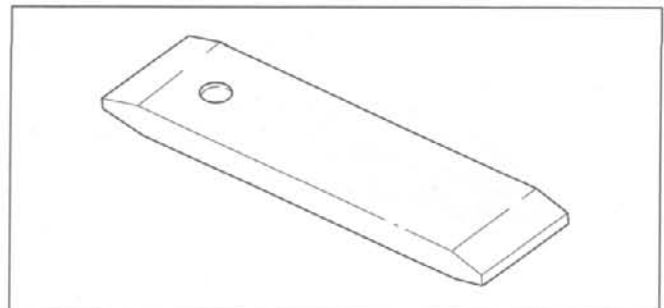
**Part No. HD-37842A Inner/Outer Main Drive Gear
Needle Bearing Installer**



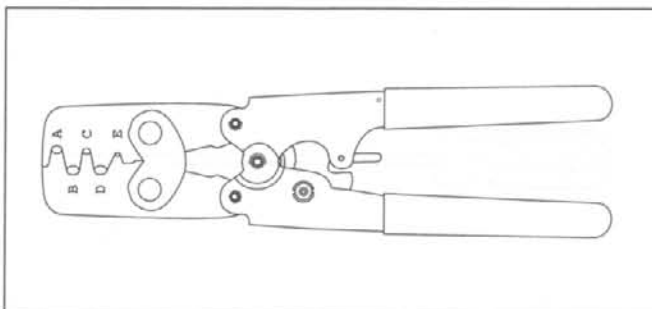
**Part No. HD-38361 Cam Gear Gauge Pin Set
(0.108 in. (2.74 mm) Diameter)**



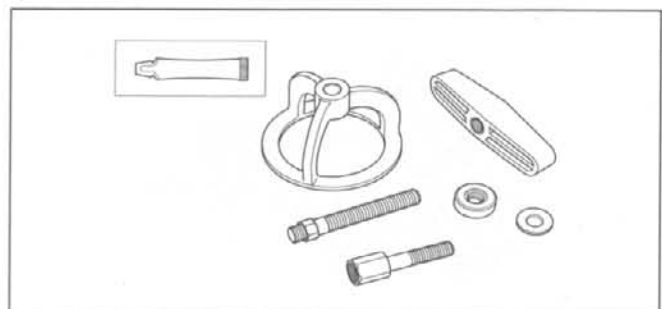
**Part No. HD-38125-6 Packard Terminal Crimp Tool
(Sealed and non-sealed connectors)**



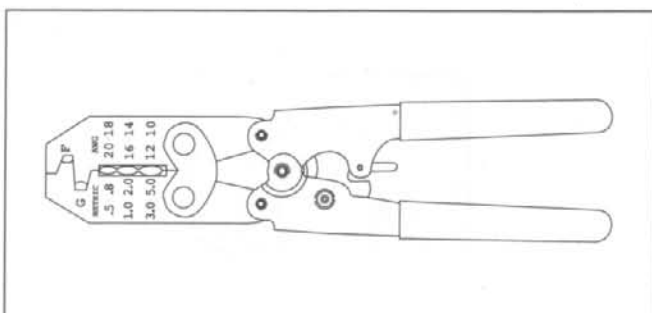
Part No. HD-38362 Sprocket Locking Link



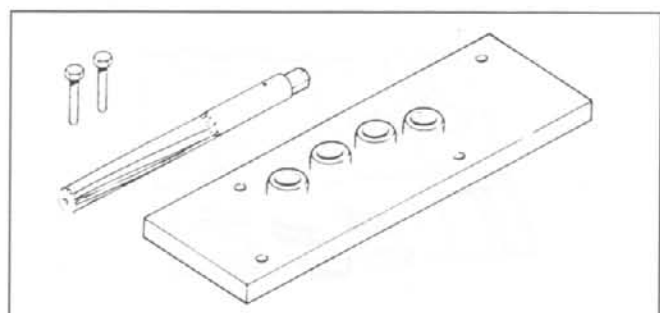
**Part No. HD-38125-7 Packard Terminal Crimp Tool
(Sealed connectors)**



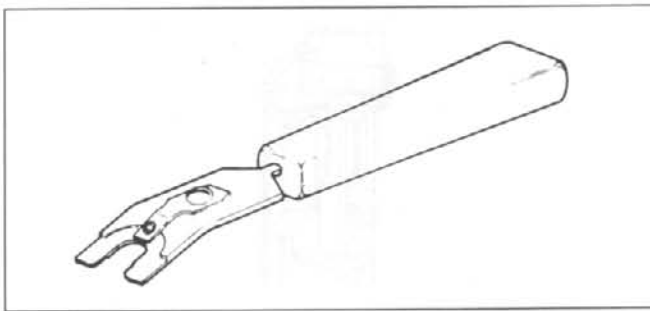
**Part No. HD-38515-A Clutch Spring Compressing Tool
and Part No. HD-38515-91 Forcing Screw**



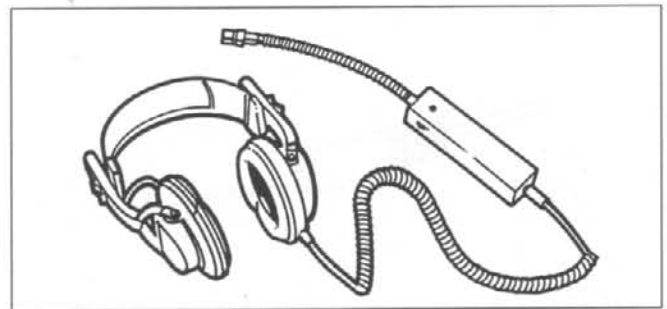
Part No. HD-38125-8 Packard Terminal Crimp Tool



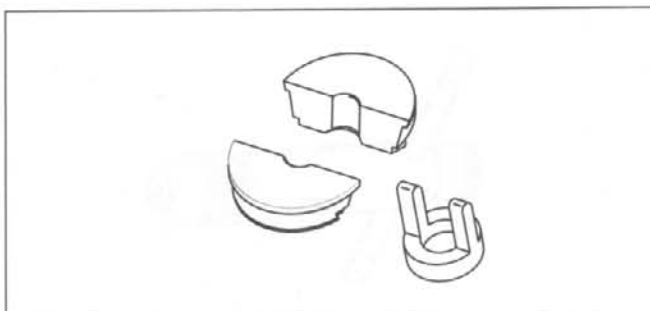
**Part No. HD-38871 Camshaft Bushing Plate Pilot
and Reamer**



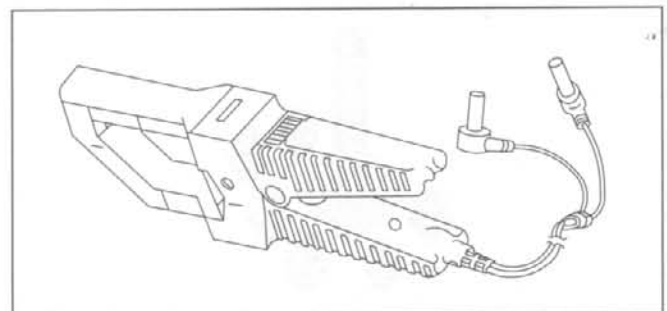
Part No. HD-39151 Shift Drum Retaining Ring Installer



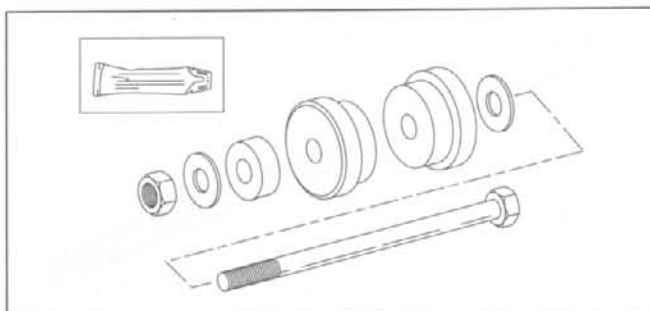
Part No. HD-39565 Engine Sound Probe



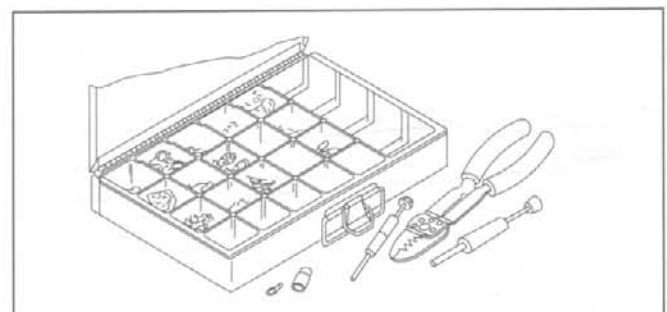
Part No. HD-39301A Steering Head Bearing Race Remover



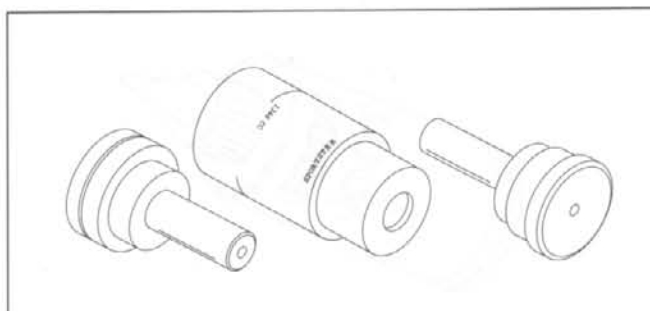
**Part No. HD-39617 Inductive Amp Probe.
Use with HD-35500A.**



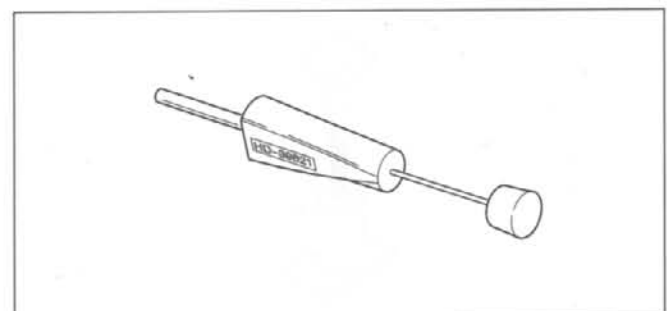
Part No. HD-39302 Steering Head Bearing Race Installer



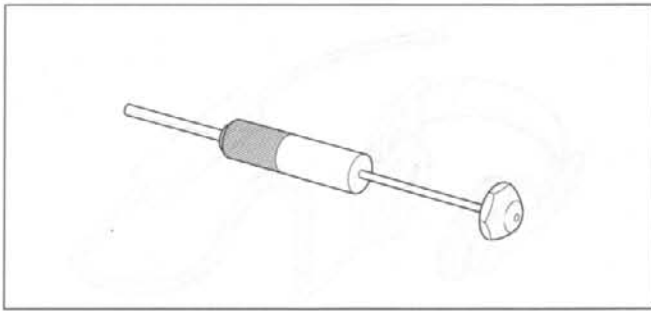
Part No. HD-39621 Electrical Terminal Repair Kit



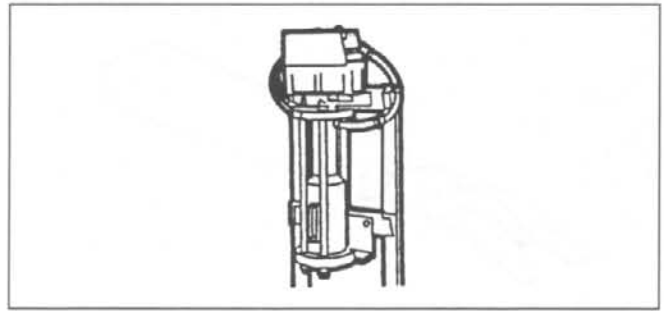
Part No. HD-39458 Sprocket Shaft Bearing Outer Race Installer



Part No. HD-39621-27 Socket Terminal Remover



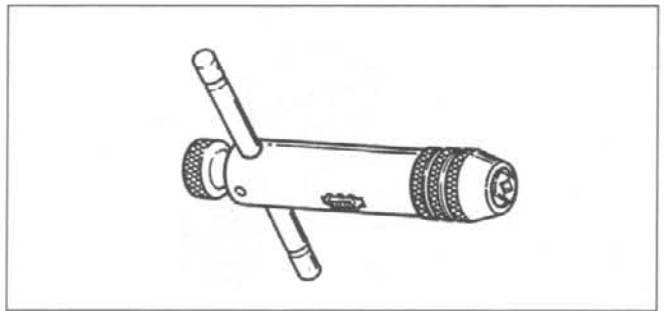
Part No. HD-39621-28 Pin Terminal Remover



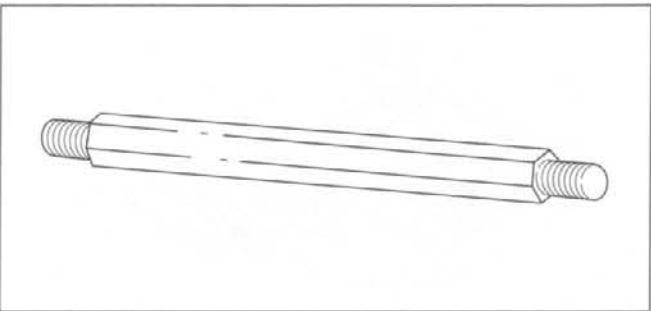
Part No. HD-39823 Oil Filter Crusher, Large



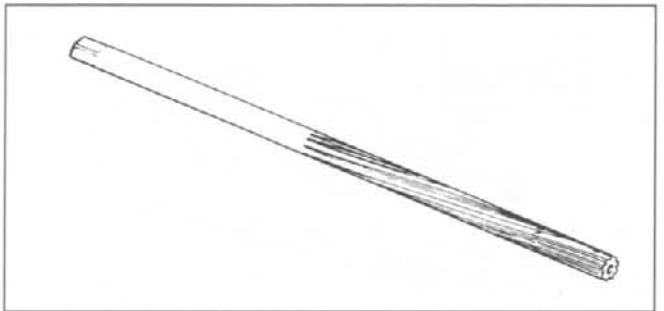
Part No. HD-39782 Cylinder Head Support



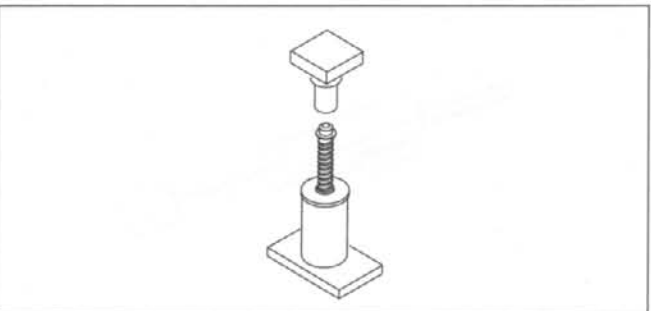
Part No. HD-39847 Universal Ratcheting Tap/
Reamer Handle



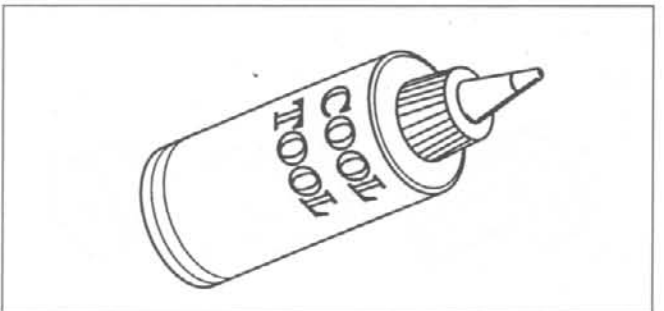
Part No. HD-39786 Cylinder Head Holding Fixture



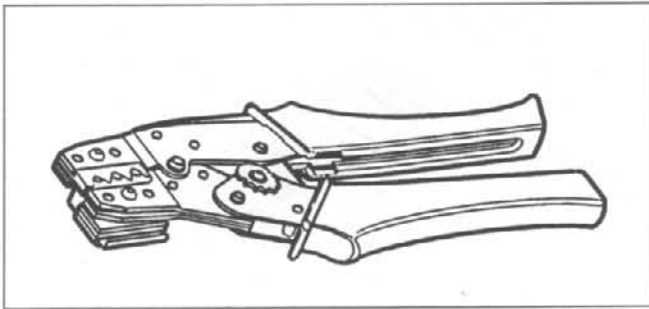
Part No. HD-39932 (Steel) or HD-39932-CAR (Carbide)
Intake and Exhaust Valve Guide Reamer



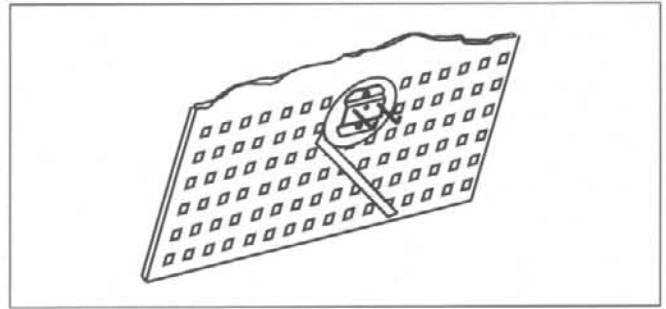
Part No. HD-39800 Oil Filter Crusher, Small



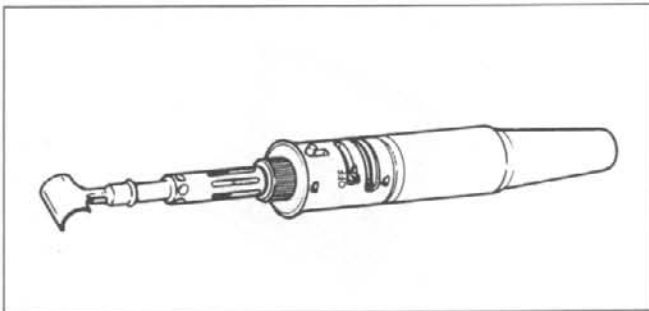
Part No. HD-39964 Reamer Lubricant (Cool Tool)



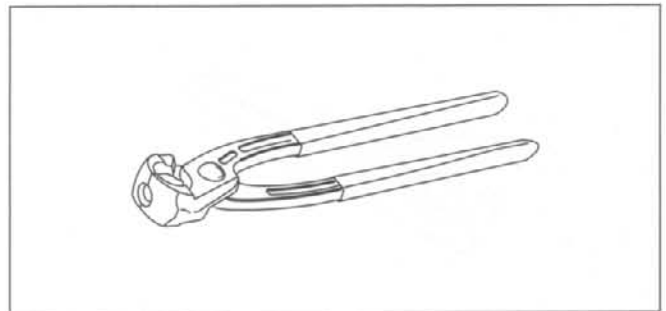
Part No. HD-39965 Deutsch Terminal Crimp Tool



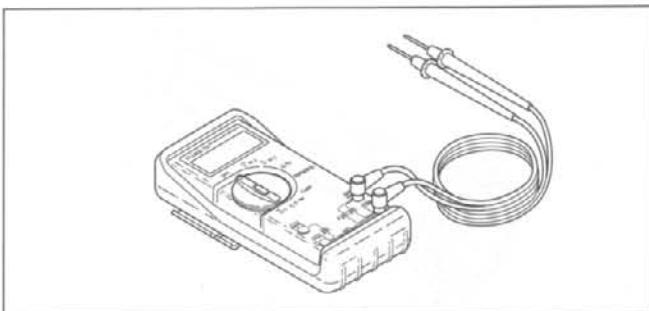
Part No. HD-41025 Tool Organizational System



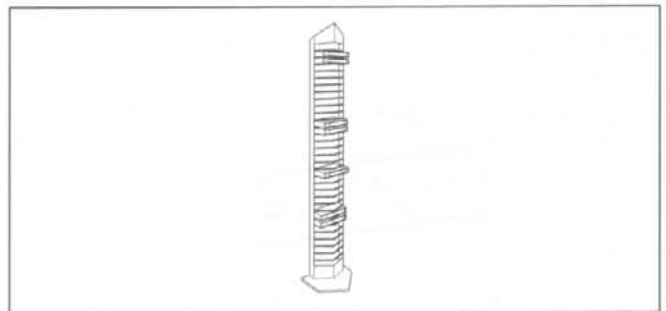
Part No. HD-39969 Ultra-Torch UT-100



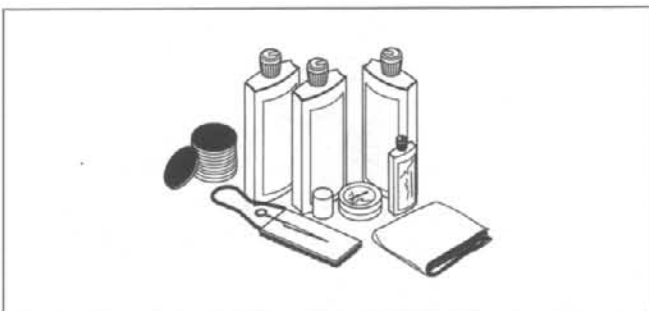
Part No. HD-41137 Hose Clamp Pliers



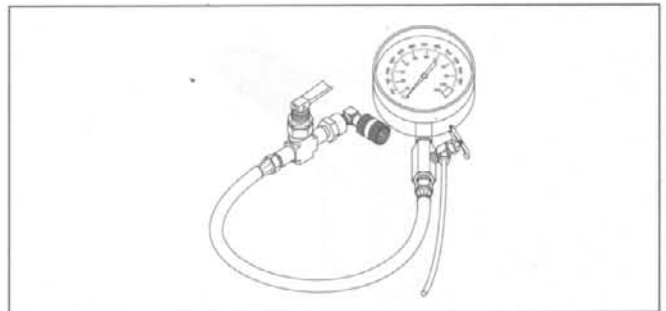
Part No. HD-39978 Fluke 78 Multimeter (DVOM)



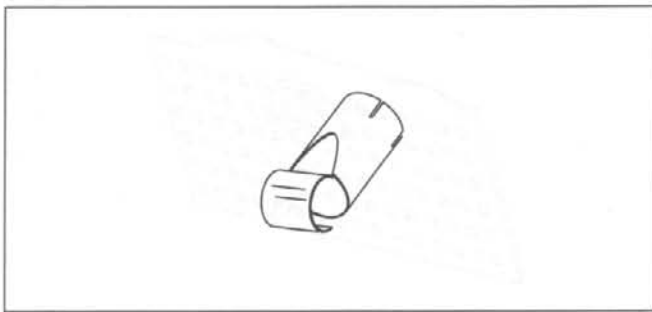
Part No. HD-41155 VHS Video Shelf



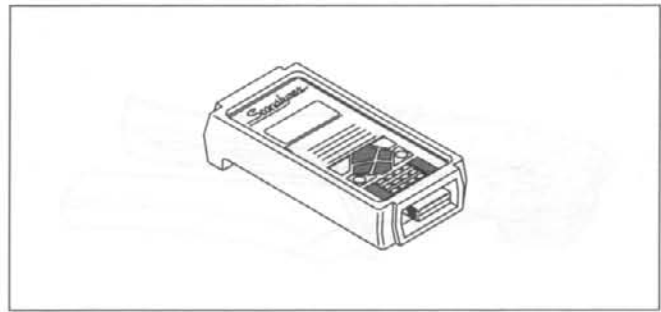
Part No. HD-39994 Paint Repair Kit



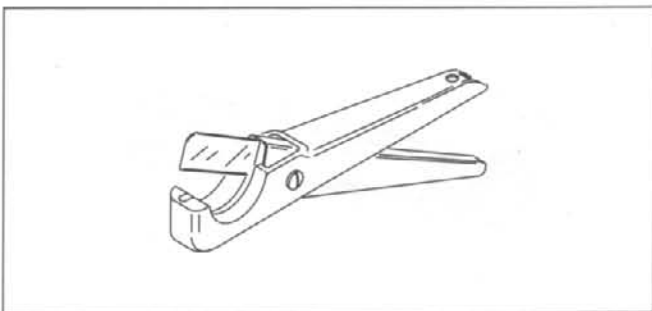
Part No. HD-41182 Fuel Pressure Gauge



Part No. HD-41183 Heat Shield Attachment
Use with Part No. HD-25070.



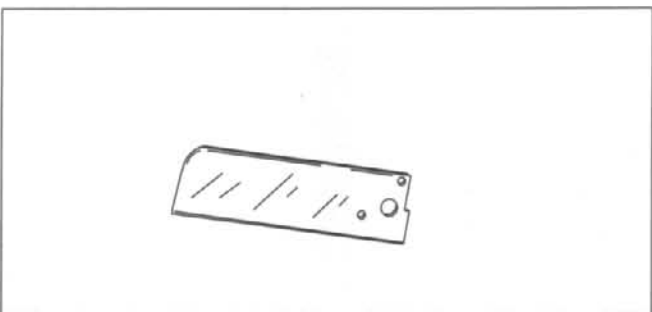
Part No. HD-41325 Scanalyzer



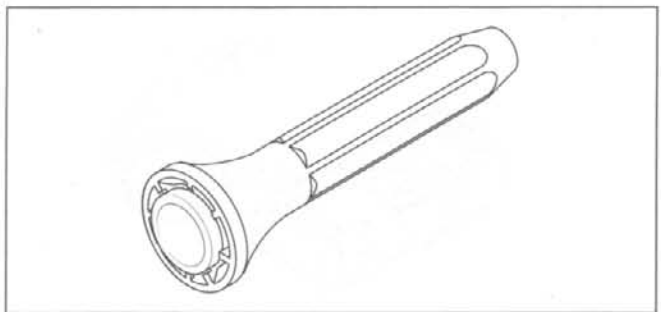
Part No. HD-41185 Hose Cutting Tool



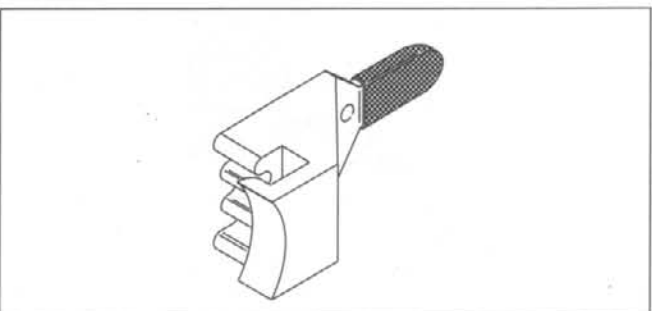
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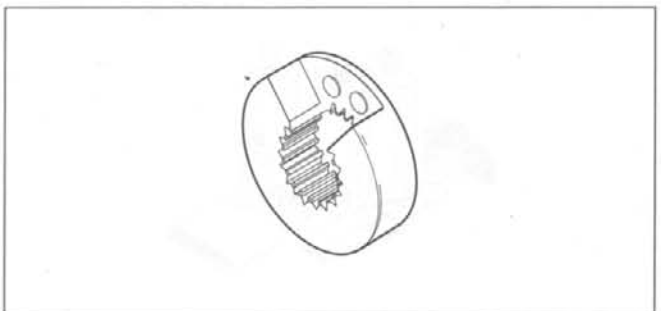
Part No. HD-41185-1 Oil Hose Cutter



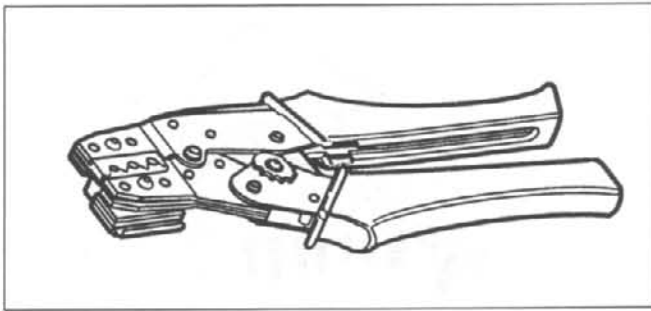
Part No. HD-41496 Main Drive Gear Seal Installer



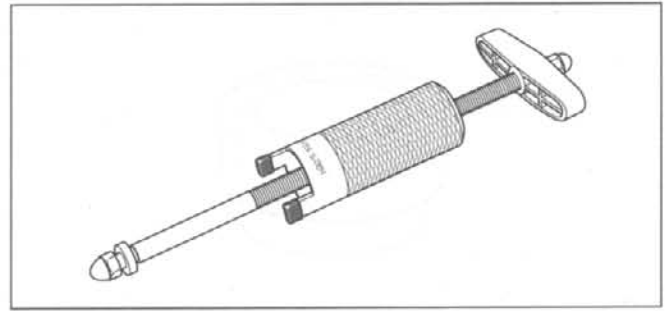
Part No. HD-41321 Sprocket Holding Tool



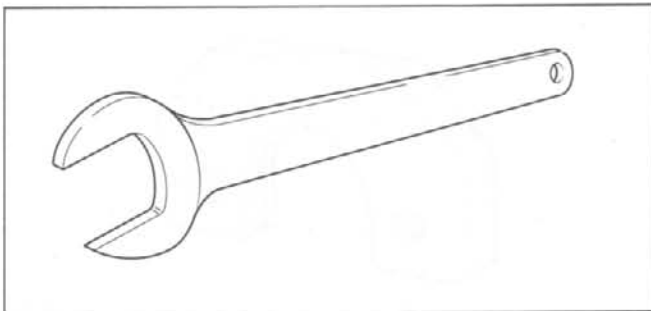
Part No. HD-41506 Crankshaft Locking Tool



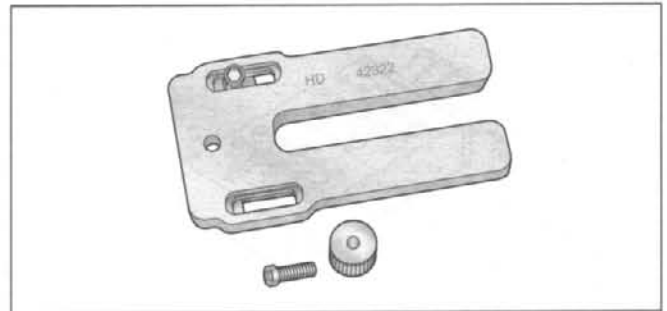
Part No. HD-41609 Amp Terminal Crimp Tool



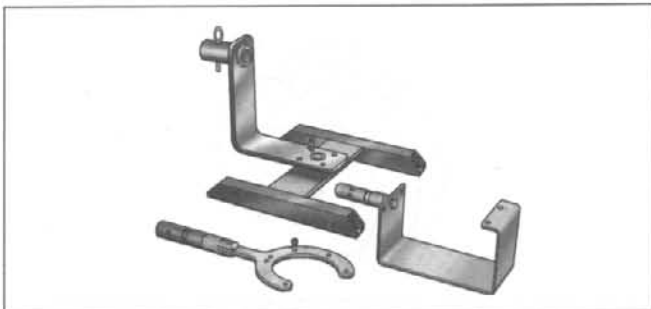
Part No. HD-42320 Piston Pin Remover/Installer



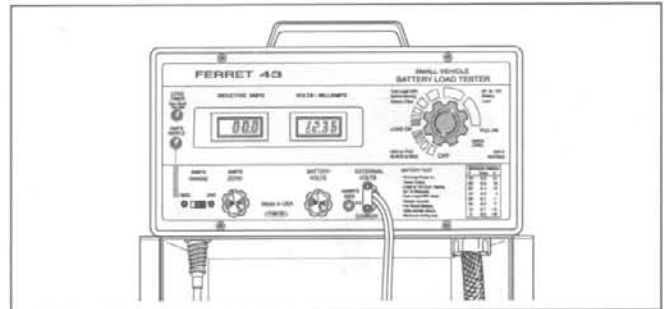
Part No. HD-41675 Oil Pressure Sending Unit Wrench



Part No. HD-42322 Piston Support Plate



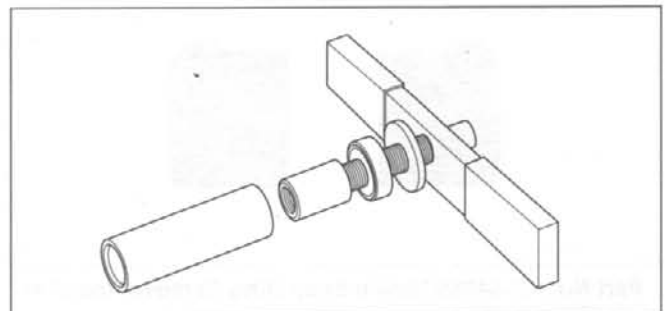
Part No. HD-42310 Engine/Transmission Stand



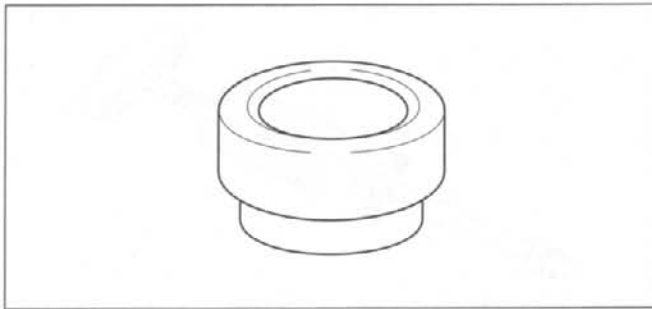
Part No. HD-42376 Battery/Charging System Load Tester



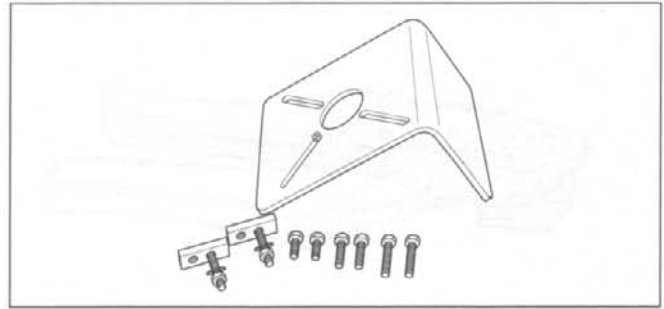
Part No. HD-42311 Oil Filter Wrench



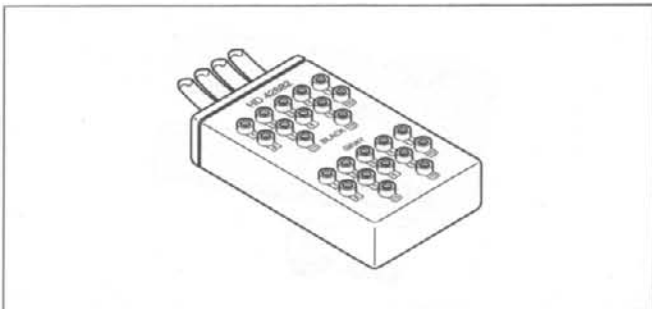
Part No. HD-42579 Sprocket Bearing/Seal Installer



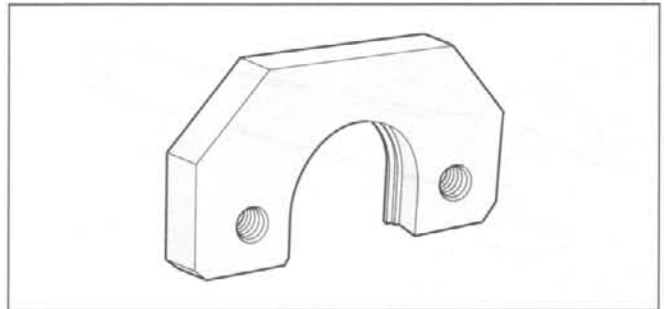
Part No. HD-42774 Sprocket Shaft Seal Installer



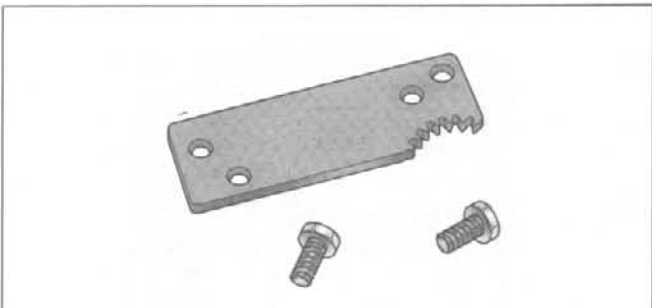
Part No. HD-44358 Flywheel Fixture (2000 Models)



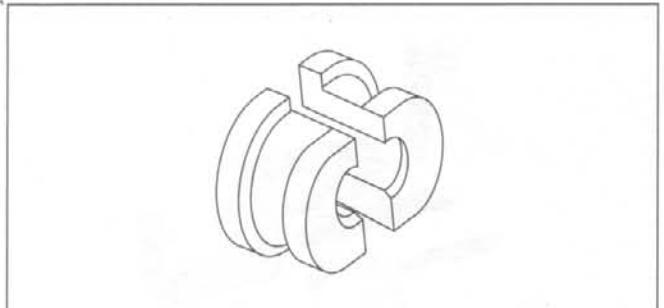
Part No. HD-42682 Breakout Box



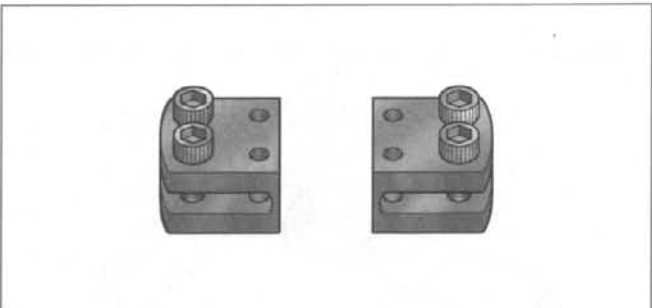
Part No. HD-44404 Sprocket Shaft Inner Timkin Bearing Remover



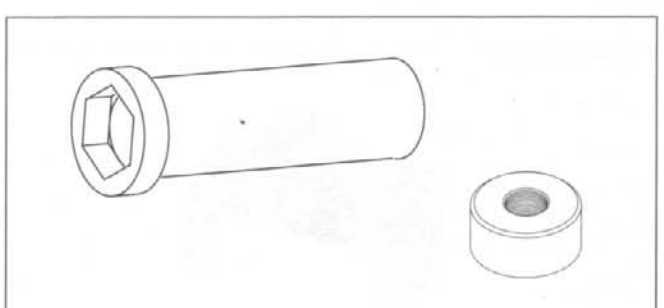
Part No. HD-43984 Crankshaft Locking Tool



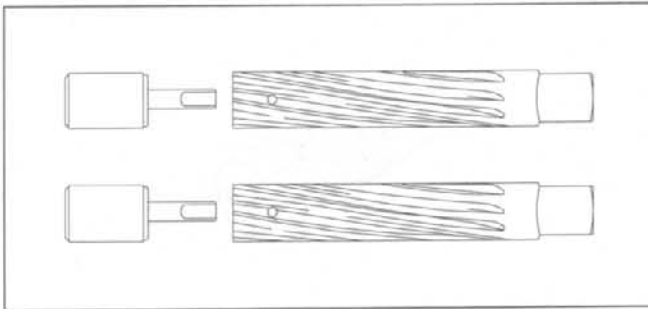
Part No. HD-94547-101 Crankshaft Bearing Outer Race Remover/Installer



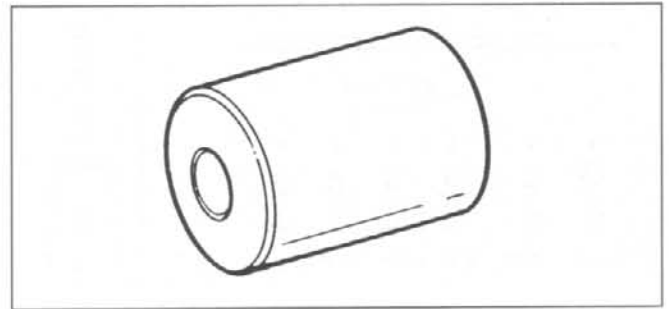
Part No. HD-44069 Timkin Snap Ring Remover/Installer



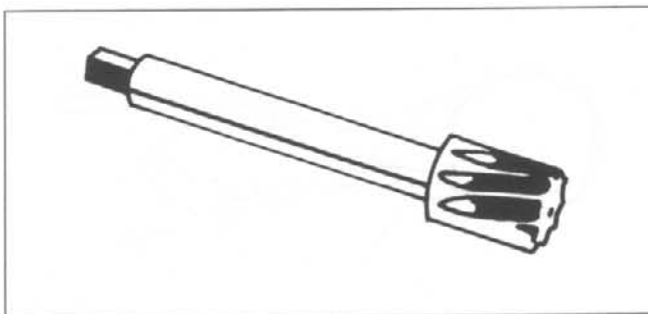
Part No. HD-94660-37B Mainshaft Locknut Wrench



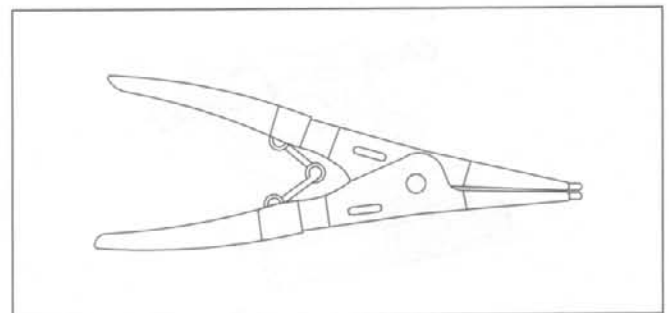
Part No. HD-94800-26A Connecting Rod Bushing Reamers and Pilots



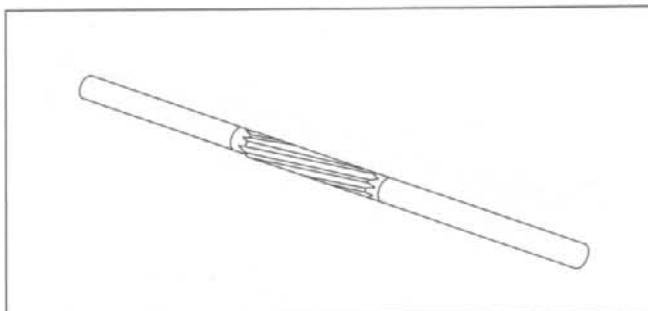
Part No. HD-94812-87 Pinion Shaft Reamer Pilot.
Use with HD-94812-1.



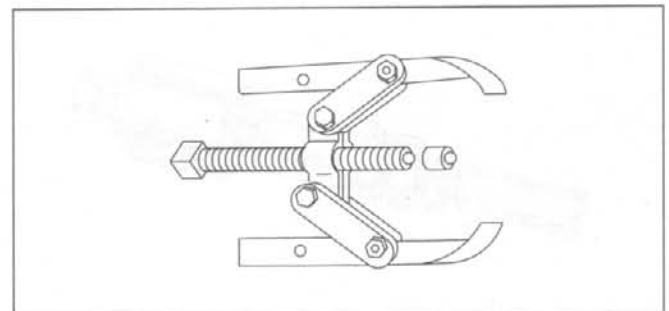
Part No. HD-94803-67 Rear Intake Camshaft Bushing Reamer



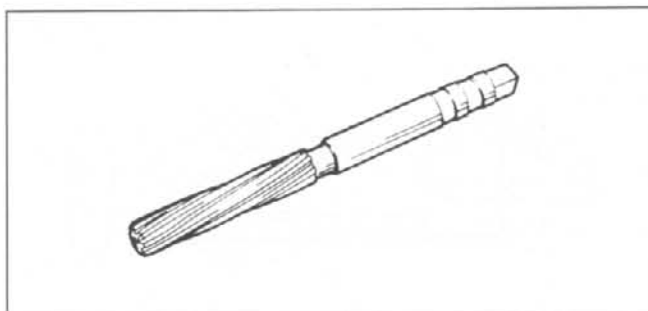
Part No. HD-95017-61 Large External Retaining Ring Pliers



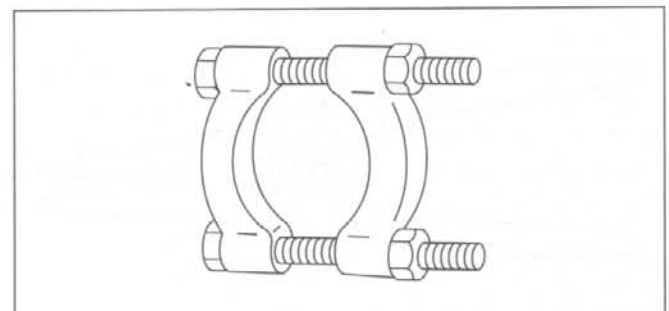
Part No. HD-94804-57 Rocker Arm Bushing Reamer



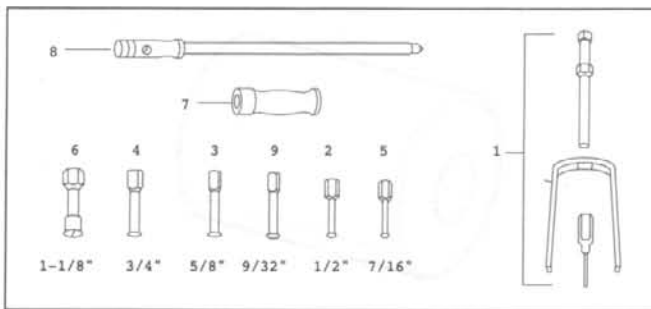
Part No. HD-95635-46 All-Purpose Claw Puller



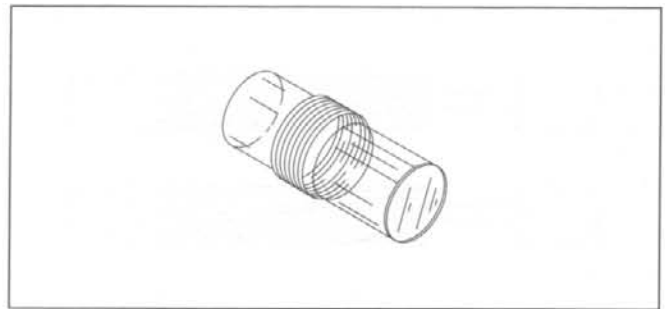
Part No. HD-94812-1 Pinion Shaft Bushing Reamer.
Use with HD-94812-87.



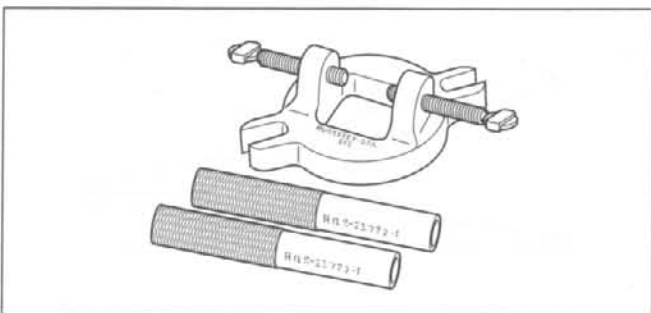
Part No. HD-95637-46A Wedge Attachment for Claw Puller. Use with HD-95635-46.



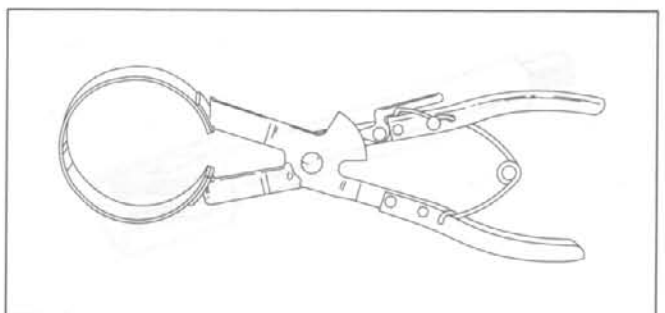
Part No. HD-95760-69A Bushing/Bearing Puller Tool Set.
Set includes items 1-7. Items 8 (HD-95769-69), 9 (HD-95770-69) and 10 (HD-95771-69) are optional.



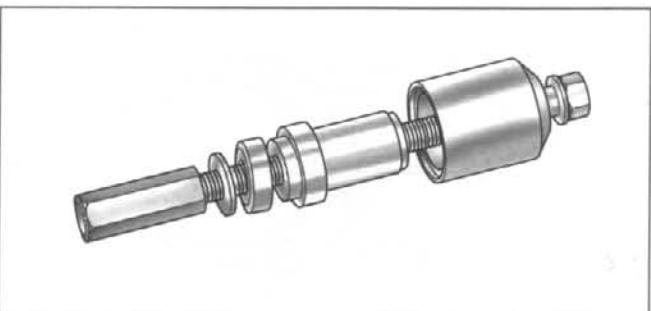
Part No. HD-96295-65D Timing Mark View Plug.
Use with HD-33813.



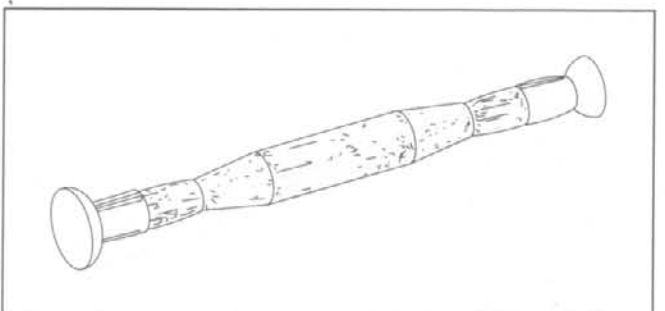
Part No. HD-95952-33B Connecting Rod Clamping Tool



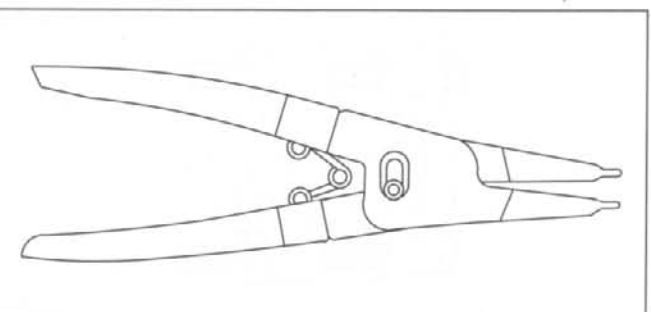
Part No. HD-96333-51C Piston Ring Compressor



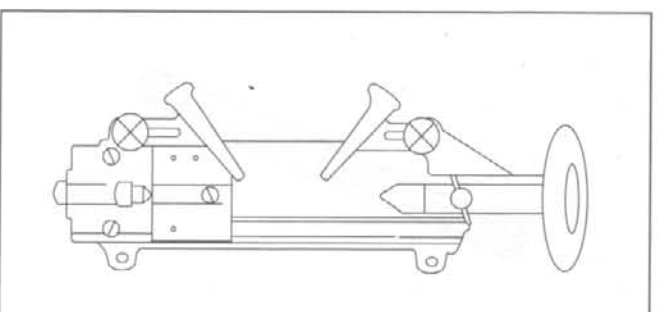
Part No. HD-95970-32D Piston Pin Bushing Tool



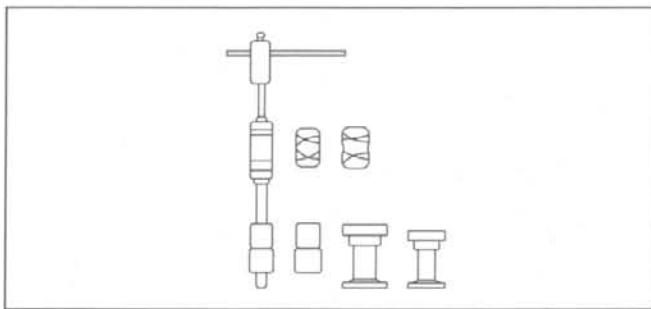
Part No. HD-96550-36A Valve Lapping Tool



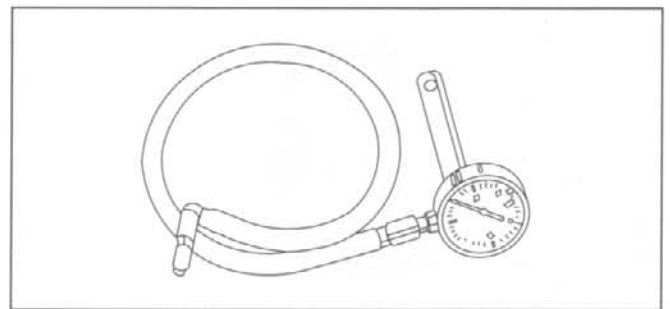
Part No. HD-96215-49 Small Internal Retaining Ring Pliers



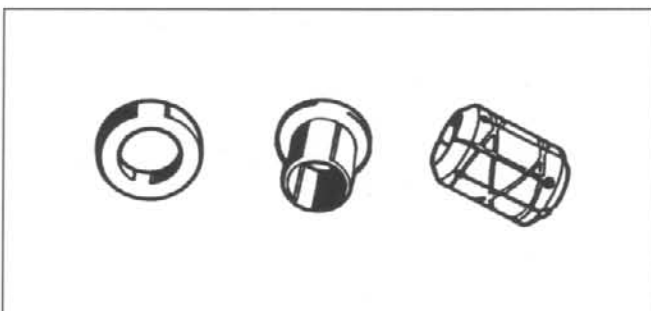
Part No. HD-96650-80 Flywheel Truing Stand



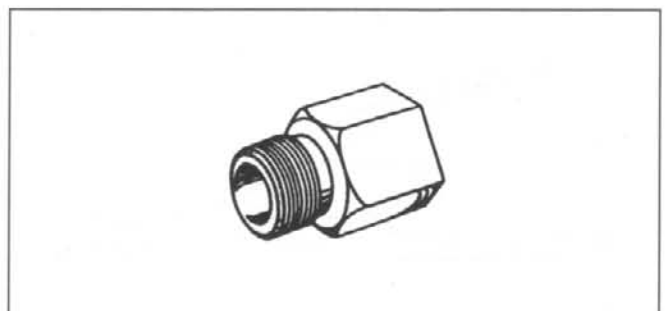
Part No. HD-96710-40B Crankcase Main Bearing Lapping Tool



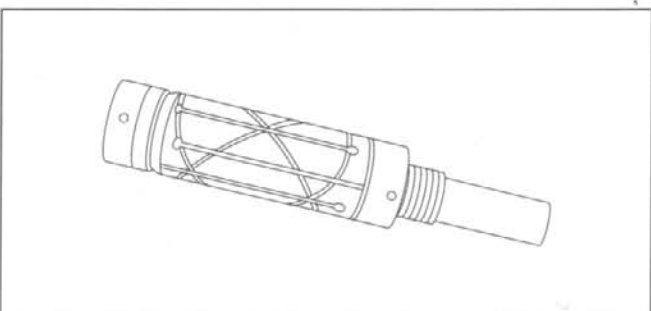
Part No. HD-96921-52A Oil Pressure Gauge



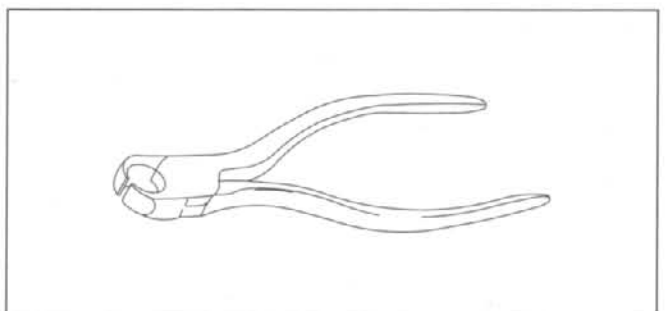
Part No. HD-96718-87 Pinion Bearing Outer Race Lapping Kit



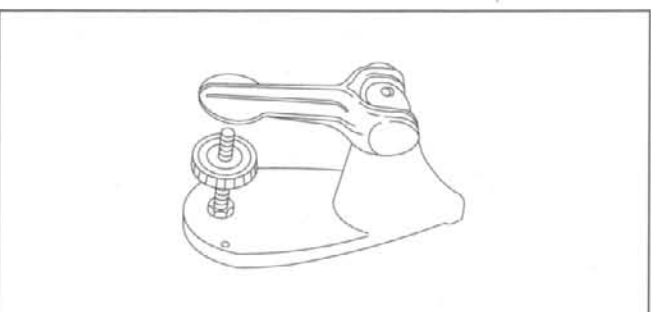
**Part No. HD-96940-52A Oil Pressure Gauge Adapter.
Use with HD-96921-52A.**



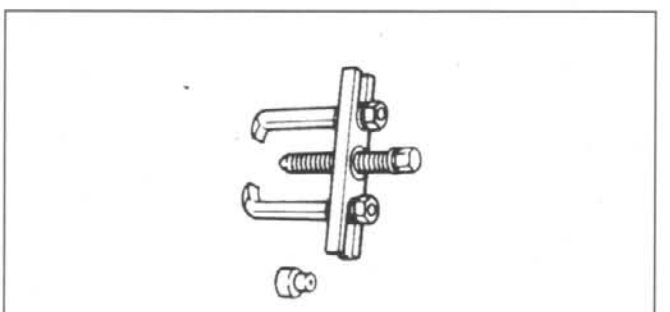
Part No. HD-96740-36 Connecting Rod Lapping Arbor



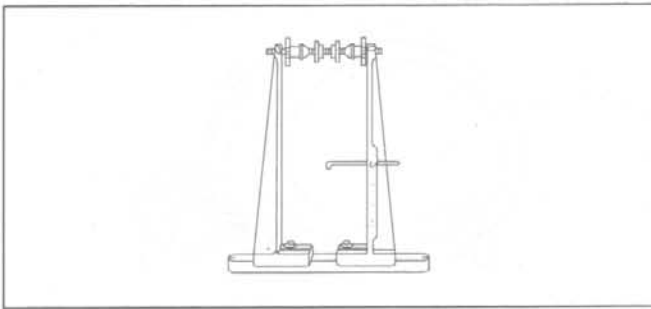
Part No. HD-97087-65B Hose Clamp Pliers



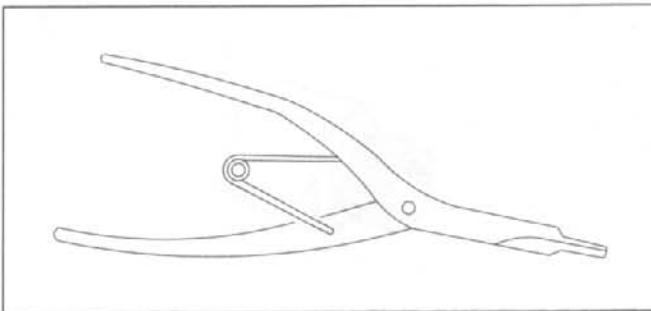
Part No. HD-96796-47 Valve Spring Tester



Part No. HD-97292-61 Two Claw Puller



**Part No. HD-99500-80 Wheel Truing
and Balancing Stand**



**Part No. J-5586 Transmission Shaft
Retaining Ring Pliers**

APPENDIX B—METRIC CONVERSIONS

Table B-1. Metric Conversions

MILLIMETERS to INCHES (mm x 0.03937 = inches)								INCHES to MILLIMETERS (inches x 25.40 = mm)							
mm	in.	mm	in.	mm	in.	mm	in.	in.	mm	in.	mm	in.	mm	in.	mm
.1	.0039	25	.9842	58	2.283	91	3.582	.001	.025	.6	15.240	1 15/16	49.21	3 5/16	84.14
.2	.0078	26	1.024	59	2.323	92	3.622	.002	.051	5/8	15.875	2	50.80	3 3/8	85.72
.3	.0118	27	1.063	60	2.362	93	3.661	.003	.076	11/16	17.462	2 1/16	52.39	3.4	86.36
.4	.0157	28	1.102	61	2.401	94	3.701	.004	.102	.7	17.780	2.1	53.34	3 7/16	87.31
.5	.0197	29	1.142	62	2.441	95	3.740	.005	.127	3/4	19.050	2 1/8	53.97	3 1/2	88.90
.6	.0236	30	1.181	63	2.480	96	3.779	.006	.152	.8	20.320	2 3/16	55.56	3 9/16	90.49
.7	.0275	31	1.220	64	2.519	97	3.819	.007	.178	13/16	20.638	2.2	55.88	3.6	91.44
.8	.0315	32	1.260	65	2.559	98	3.858	.008	.203	7/8	22.225	2 1/4	57.15	3 5/8	92.07
.9	.0354	33	1.299	66	2.598	99	3.897	.009	.229	.9	22.860	2.3	58.42	3 11/16	93.66
1	.0394	34	1.338	67	2.638	100	3.937	.010	.254	15/16	23.812	2 5/16	58.74	3.7	93.98
2	.0787	35	1.378	68	2.677	101	3.976	1/64	.397	1	25.40	2 3/8	60.32	3 3/4	95.25
3	.1181	36	1.417	69	2.716	102	4.016	.020	.508	1 1/16	26.99	2.4	60.96	3.8	96.52
4	.1575	37	1.456	70	2.756	103	4.055	.030	.762	1.1	27.94	2 7/16	61.91	3 13/16	96.84
5	.1968	38	1.496	71	2.795	104	4.094	1/32	.794	1 1/8	28.57	2 1/2	63.50	3 7/8	98.42
6	.2362	39	1.535	72	2.834	105	4.134	.040	1.016	1 3/16	30.16	2 9/16	65.09	3.9	99.06
7	.2756	40	1.575	73	2.874	106	4.173	.050	1.270	1.2	30.48	2.6	66.04	3 15/16	100.01
8	.3149	41	1.614	74	2.913	107	4.212	.060	1.524	1 1/4	31.75	2 5/8	66.67	4	101.6
9	.3543	42	1.653	75	2.953	108	4.252	1/16	1.588	1.3	33.02	2 11/16	68.26	4 1/16	102.19
10	.3937	43	1.693	76	2.992	109	4.291	.070	1.778	1 5/16	33.34	2.7	68.58	4.1	104.14
11	.4331	44	1.732	77	3.031	110	4.331	.080	2.032	1 3/8	34.92	2 3/4	69.85	4 1/8	104.77
12	.4724	45	1.772	78	3.071	111	4.370	.090	2.286	1.4	35.56	2.8	71.12	4 3/16	106.36
13	.5118	46	1.811	79	3.110	112	4.409	.1	2.540	1 7/16	36.51	2 13/16	71.44	4.2	106.68
14	.5512	47	1.850	80	3.149	113	4.449	1/8	3.175	1 1/2	38.10	2 7/8	73.02	4 1/4	107.95
15	.5905	48	1.890	81	3.189	114	4.488	3/16	4.762	1 9/16	39.69	2.9	73.66	4.3	109.22
16	.6299	49	1.929	82	3.228	115	4.527	.2	5.080	1.6	40.64	2 15/16	74.61	4 5/16	109.54
17	.6693	50	1.968	83	3.268	116	4.567	1/4	6.350	1 5/8	41.27	3	76.20	4 3/8	111.12
18	.7086	51	2.008	84	3.307	117	4.606	.3	7.620	1 11/16	42.86	3 1/16	77.79	4.4	111.76
19	.7480	52	2.047	85	3.346	118	4.645	5/16	7.938	1.7	43.18	3.1	78.74	4 7/16	112.71
20	.7874	53	2.086	86	3.386	119	4.685	3/8	9.525	1 3/4	44.45	3 1/8	79.37	4 1/2	114.30
21	.8268	54	2.126	87	3.425	120	4.724	.4	10.160	1.8	45.72	3 3/16	80.96	4 9/16	115.89
22	.8661	55	2.165	88	3.464	121	4.764	7/16	11.112	1 13/16	46.04	3.2	81.28	4.6	116.84
23	.9055	56	2.205	89	3.504	122	4.803	1/2	12.700	1 7/8	47.62	3 1/4	82.55	4 5/8	117.47
24	.9449	57	2.244	90	3.543	123	4.842	9/16	14.288	1.9	48.26	3.3	83.82	4 11/16	119.06








FASTENER TORQUE VALUES

Torque specifications for specific components are listed in each section at the point of use. When converting to Newton-meters, use the formulas given under the metric chart. For all other steel fasteners, use the values listed in one of the tables below. In the English table, torque figures are listed in ft-lbs, except those marked with an asterisk (*), which are listed in in-lbs. In the metric table, figures are listed in Newton-meters.

WARNING








The quality fasteners used on Buell motorcycles have specific strength, finish and type requirements to perform properly in the assembly and the operating environment. Use only genuine Buell replacement fasteners tightened to the proper torque. Substitution could cause fastener failure, which could result in death or serious injury.

Table B-2. English Torque Values

FASTENER	TYPE	MINIMUM TENSILE STRENGTH	MATERIAL	BODY SIZE OR OUTSIDE DIAMETER														
				# (number)							in. (inches)							
				2	3	4	5	6	8	10	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
	SAE 2 STEEL	74,000 PSI	LOW CARBON								6	12	20	32	47	69	96	155
	SAE 5 STEEL	120,000 PSI	MEDIUM CARBON HEAT TREAT						14*	22*	10	19	33	54	78	114	154	257
	SAE 7 STEEL	133,000 PSI	MEDIUM CARBON ALLOY								13	25	44	71	110	154	215	360
	SAE 8 STEEL	150,000 PSI	MEDIUM CARBON ALLOY								14	29	47	78	119	169	230	380
	SAE 8 STEEL	150,000 PSI	MEDIUM CARBON ALLOY								14	29	47	78	119	169	230	380
	SOCKET SET SCREW	212,000 PSI	HIGH CARBON QUENCHED TEMPERED					9*	16*	30*	70*	140*	18	29	43	63	100	146
	STUDS			Use SAE 2, 5 and 8 values when grade is known, with nut of sufficient strength.														

*Torque values in in-lbs.

Table B-3. Metric Torque Values

FASTENER	TYPE	MINIMUM TENSILE STRENGTH	MATERIAL	BODY SIZE OR OUTSIDE DIAMETER														
				# (number)							mm (millimeters)							
				2	3	4	5	6	8	10	6.4	7.9	9.5	11.1	12.7	14.3	15.9	19.1
	SAE 2 STEEL	5,202 kg/cm ²	LOW CARBON								8.3	16.6	27.7	44.3	65.0	95.4	132.8	214.4
	SAE 5 STEEL	8,436 kg/cm ²	MEDIUM CARBON HEAT TREAT						1.6	2.5	13.8	26.3	45.6	74.7	107.9	157.7	213.0	355.4
	SAE 7 STEEL	9,350 kg/cm ²	MEDIUM CARBON ALLOY								18.0	34.6	60.8	98.2	152.1	213.0	297.3	497.9
	SAE 8 STEEL	10,545 kg/cm ²	MEDIUM CARBON ALLOY								19.4	40.1	65.0	107.9	164.6	233.7	318.1	525.5
	SAE 8 STEEL	10,545 kg/cm ²	MEDIUM CARBON ALLOY								19.4	40.1	65.0	107.9	164.6	233.7	318.1	525.5
	SOCKET SET SCREW	14,904 kg/cm ²	HIGH CARBON QUENCHED TEMPERED					1.0	1.8	3.4	8.1	16.1	24.9	40.1	59.5	87.1	138.3	201.9
	STUDS			Use SAE 2, 5 and 8 values when grade is known, with nut of sufficient strength.														

foot-pounds (ft-lbs) x 1.356 = Newton-meters (Nm)

inch-pounds (in-lbs) x 0.113 = Newton-meters (Nm)

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